RETARDATION OF PAIN-SENSE IN LOCOMOTOR ATAXIA.

(PRELIMINARY COMMUNICATION.)

By L. J. J. Muskens, M.D.

ASSISTANT IN NEUROPATHOLOGY, CORNELL MEDICAL COLLEGE.

That *retardation* of the sensibility for pain is not at all rare in locomotor ataxia is now well known. Attention was called to this fact by Cruveilhier, Charcot, Leyden, Naunyn, Weir Mitchell, Gowers, E. Remak, Berger, Bolkostern, and M. Lähr. Most observers point out, also, that this retardation is often met with in the lower extremities; more detailed localization of this qualitative sensibility-disturbance I have not found.

In one case of undoubted and well developed tabes dorsalis I found a circumscribed circular area of analgesia below the knee, while the sense for touch was intact. Examining carefully the zone where the algesia went over into the analgesia, I found that the response of the patient on the sticking with a needle was usually delayed. He remarked also after inquiry that he felt two distinctly separated sensations, first the touch, then the pain. The same patient had, like many well developed cases, a broad zone of analgesia over the upper chest (this is also in incipient cases a rather frequent and early symptom of the disease), whereas his sensibility for touch was well preserved. On the borders of this area, as well as on those of the analgesic (ulnar) side of both arms, a similar condition was found almost constantly, viz.: *A zone of retardation of pain-sense on the border of the analgesic areas.*

This observation seemed remarkable enough to lead me to examine with particular interest the borders of the analgesic zone in all further cases, viz.: the edges of the analgesic area where the sense for touch was not disturbed. This was done in 31 cases. Examining with the necessary care and patience, I could find in all cases, at least on one or more of said localities, more or less retardation.

Quite an amount of power of observation and analysis of sensation is needed on the part of the patient to distinguish qualitatively different sensations; and it is necessary in almost all cases to help the patient in a way; to ask him which he feels first, the touch of the pin point or the pain. If one examines a patient on the said localities, under said conditions, the patient will soon catch the meaning of the questions and answer either: "First the pain," or, "The touch and then the pain;" or, if the pin was pressed in the skin of the algesic zone: "First the pin," or, "Both together at the same time." This method has proved to me to be much more useful than that usually employed, when the psychical reaction time is observed, which is very different in different patients, and varies decidedly in less educated people.

That the border between algesic and analgesic areas often is found very different, even within a few minutes, and that there are many factors which must be regarded when locating this border, is a fact to be borne in mind. The zone of retardation varies very much in broadness, from a millimeter and less to some decimeters. Large zones one is apt to find more in the lower extremities, whereas the zone in many old cases of the disease cannot well be found on the upper border of the analgesic zone of the chest, and on the borders of the ulnar analgesic zone on the upper extremities. It appears as if the retarded zone with particular regularity is found where the analgesia is developing, and cannot so easily be found when the process of destruction of centripetal fibers has come to rest.

For several reasons I am led to believe that this retardation is an important and early symptom of the disease, and probably always precedes the total loss of sensibility for pain. This retardation is probably of differential diagnostic value. It seems to me that retardation of conduction of stimuli is a more frequent biological phenomenon than is ordinarily supposed. The retardation of the conduction of the contraction wave in the cardiac muscle under influence of the pneumogastric nerve was studied by me not long ago,[1] after Engelmann had observed the same phenomenon in the dying heart. As to the retardation in the centripetal nerve fibers in diseases of cord and peripheral nerves, it is quite clear that where the nerve fibers are slowly perishing, the first phenomenon may be retardation of the conduction of the impulses, and that only later the loss of sensibility for said quality may be total.

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[1] L. J. J. Muskens, "An Analysis of the Action of the Vagus Nerve on the Heart." American Journal of Physiology. I, No. IV., 1898, p. 486.

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